



(19)

(11) Publication number: **5**

Generated Document.

PATENT ABSTRACTS OF JAPAN(21) Application number: **53064676**(51) Intl. Cl.: **H01L 21/324 H01L 21/302**(22) Application date: **29.05.78**

(30) Priority:	
(43) Date of application publication:	08.12.79
(84) Designated contracting states:	
(71) Applicant:	NEC CORP
(72) Inventor:	KOBAYASHI SHOJI
(74) Representative:	

(54) MANUFACTURE OF SEMICONDUCTOR DEVICE**(57) Abstract:**

PURPOSE: To improve electric characteristics with strain in an element region eliminated, by heat-treating the reverse surface of a semiconductor substrate, with a semiconductor element on its top surface, at a temperature of more than 200°C after mechanically polishing the reverse surface to a fixed thickness.

CONSTITUTION: On semiconductor substrate 1, epitaxial layer is grown, the surface is covered with oxidized film 3, and after base region 4 and emitter region 5 are both provided, metal electrode 6 is fitted. The reverse surface of substrate 1 of the semiconductor device formed in this way is mechanically polished to a thickness suitable for pelletizing, thereby generating strain between substrate 1 and epitaxial layer 2. In other words, plastic strain layer 11 close to polished surface 7, plastic-elastic strain layer 12 from its top

closely to the surface of substrate 1, and elastic strain layer 13 from its top to the surface of epitaxial layer 2 are formed respectively. Next, a heat treatment of 400W500°C is done in N₂ gas for sixty minutes to remove strain completely except elastic strain layer 12 near polished surface 7. Consequently, the manufacture yield improves.

COPYRIGHT: (C)1979,JPO&Japio